

get back from the computer will become clearer after doing these assignments, studying the outputs, answering the interpretation questions, and doing the extra statistics problems.

### **Our Approach to Research Questions, Measurement, and Selection of Statistics**

In Chapters 1, 3, and 6, our approach is somewhat nontraditional because we have found that students have a great deal of difficulty with some aspects of research and statistics but not others. Most can learn formulas and “crunch” the numbers quite easily and accurately with a calculator or with a computer. However, many have trouble knowing what statistics to use and how to interpret the results. They do not seem to have a “big picture” or see how research design and measurement influence data analysis. Part of the problem is inconsistent terminology. We are reminded of Bruce Thompson’s frequently repeated, intentionally facetious remark at his many national workshops: “We use these different terms to confuse the graduate students.” For these reasons, we have tried to present a semantically consistent and coherent picture of how research design leads to three basic kinds of research questions (difference, associational, and descriptive) that, in turn, lead to three kinds or groups of statistics with the same names. We realize that these and other attempts to develop and utilize a consistent framework are both nontraditional and somewhat of an oversimplification. However, we think the framework and consistency pay off in terms of student understanding and ability to actually use statistics to help answer their research questions. Instructors who are not persuaded that this framework is useful can skip or modify Chapters 1, 3, and 6 and still have a book that helps their students use and interpret SPSS.

### **Major Changes in This Edition**

The major change in this edition is the new Chapter 7 on how to use SPSS to help you obtain support for the reliability and validity of your data. We also updated the windows and text to IBM SPSS 20, and we have attempted to correct any typos in the 4th edition and clarify some passages. We expanded the appendix about Getting Started with SPSS (Appendix A) to include several useful procedures that were not discussed in the body of the text. Chapter 5 has been expanded to include a figure based on descriptive statistics and how to write about it. Although this edition of our *IBM SPSS for Introductory Statistics* was written using version 20, the program is sufficiently similar to prior versions of this software that we feel you should be able to use this book with earlier and later versions as well.

### **Instructional Features**

Several user-friendly features of this book include

1. Both words and the key **windows** that you see when performing the statistical analyses. This has been helpful to “visual learners.”
2. The **complete outputs** for the analyses that we have done so you can see what you will get (we have done some editing, as shown in Appendix A to make the outputs fit better on the pages).
3. **Callout boxes** on the outputs that point out parts of the output to focus on and indicate what they mean.
4. For each output, a boxed **interpretation section** that will help you understand the output.
5. Chapter 6 provides specially developed flowcharts and tables to help you **select an appropriate inferential statistic** and **interpret statistical significance and effect sizes**. This chapter also provides an extended example of how to identify and write a research problem, research questions, and a results paragraph.
6. For the statistics in Chapters 5 and 7–11, an example of **how to write about the output** and make a table or figure for a thesis, dissertation, or research paper using the 6th edition (2010) of the *Publication Manual of the American Psychological Association*.
7. **Interpretation questions** for each chapter that stimulate you to think about the information in the chapter.